10-OP-500
UAN Plant Emergency Operations

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1.0 Introduction

This procedure was written as a guideline to safely manage an emergency operation at the UAN Plant. The emergency operation procedure provides direction (with Cautions and Warnings) to avoid known potential safety hazards but all potential hazards CANNOT be foreseen. Everyone must stay alert to identify potential hazards.

CVR expects this procedure to be followed as closely as possible but not blindly. If a condition is suspected to be a potential hazard, STOP work and discuss with supervisor and other operators to determine the risk of harming personnel, equipment and/or the environment.

If the condition is determined not to be a hazard, continue with the procedure as written.

If the condition is determined to be a hazard, deviate from the procedure with modifications to complete the procedure safely.

2.0 UAN Plant Emergency Operation

Purpose

The purpose of this procedure is to provide guidelines for a safe management of an emergency operating situation at the UAN Plant in accordance to OSHA Regulation 29 CFR 1910.119(f) Operating Procedures.

Scope

This procedure will be used by the CVR Nitrogen Fertilizer personnel, Area 10, operating the UAN Plant.

Process Safety Information

Number	Document Title
D01-1001	1500 STD UAN(32) Solution Plant P&ID
D01-1002	1500 STD UAN(32) Solution Plant P&ID
D01-1003	Urea Compression Area P&ID
D01-1004	Primary and Secondary Reactors P&ID
D01-1005	Ammonia Scrubber, Condenser and Surge Tank P&ID
D01-1005A	Ammonia Scrubber Bottom P&ID
D01-1006	Decomposer and Separator P&ID
D01-1007	LP Decomposer and Off-Gas Separator P&ID
D01-1010	1500 STD UAN(32) Solution Plant P&ID
D01-1011	1500 STD UAN(32) Solution Plant P&ID
D01-1012	Compressor Auxiliaries P&ID
D01-1013	1500 STD UAN(32) Solution Plant P&ID
D01-1014	1500 STD UAN(32) Solution Plant P&ID
D01-1015	1500 STD UAN(32) Solution Plant P&ID
D01-1016	1500 STD UAN(32) Solution Plant P&ID
D01-1017	1500 STD UAN(32) Solution Plant P&ID
D01-1020	1500 STD UAN(32) Solution Plant P&ID
D01-1021	Neutralizer / Scrubber P&ID
D01-1022	1500 STD UAN(32) Solution Plant P&ID
D01-1023	1500 STD UAN(32) Solution Plant P&ID
D01-1024	Cooling Water Distribution P&ID
D01-1025	Steam and Condensate Distribution P&ID
D01-1026	Utility Stations, Showers, and Unit Heaters
D01-1027	Steam and Condensate Tracing
D01-1028	UAN Shift Tanks and Transfer Pumps
CF-2-002	UAN Flare
D01-10100	UAN Expansion Project – Urea Process Flow Diagram
D01-10101	UAN Expansion Project – Urea PFD Material Balance
D01-10110	UAN Expansion Project – Tertiary Reactor P&ID
D01-10111	UAN Expansion Project – HP Carbamate Booster Pumps P&ID
D01-10112	UAN Expansion Project – MP Section P&ID

Number	Document Title
D01-10113	UAN Expansion Project – Urea Stripper P&ID
D01-10114	UAN Expansion Project – LP Recovery Section P&ID
D01-10115	UAN Expansion Project – Steam Condensate and Flushing System P&ID
D01-10117	UAN Expansion Project – HP Washing Pump P&ID
D01-10118	UAN Expansion Project – Relief Catch Pot #2 P&ID
D01-10119	UAN Expansion Project – HP Carbamate Pump #1
D01-10120	UAN Expansion Project – HP Carbamate Pump #2
D01-10121	UAN Expansion Project – Salof Compressor Legent Sheet
D01-10122	UAN Expansion Project – Separator V-3901 P&ID
D01-10123	UAN Expansion Project – CO2 Compressor #2 (Salof) B-3900 P&ID
D01-10124	UAN Expansion Project – Oil Coalescing Separator P&ID
D01-10125	UAN Expansion Project – Passivation Air Compressor P&ID
D01-10126	UAN Expansion Project – Passivation Air Oil Filtration Skid P&ID

Hazards & Environmental

Number	Document Title
Ammonia	SDS
Carbon Dioxide	SDS
Urea	SDS
Nitric Acid	SDS
Ammonium Nitrate	SDS
Urea Ammonium Nitrate	SDS

PPE

- Routine
- SCBA in the event of a release while conducting procedure

Tool Box

- valve wrench
- hand tools

2.1 Emergency Operation Loss of Steam - Urea

F	B		Task To Be Performed
			*Steam is necessary for the operation of the urea plant. Loss of steam will require an immediate shutdown of the urea plant.*
		1.	ACTIVATE "F" trip system, shutting down CO2 feed.
		2.	PROCEED to follow Normal Shutdown Procedure for Urea Plant

2.2 Emergency Operation Loss of Steam – Nitric Acid

F	B		Task To Be Performed
			*In the event of a sudden loss of steam, the Nitric Acid plant should shut itself down due to one of many factors concerning the safety system protecting the gauze and compressor train.*
		1.	ACTIVATE "C" trip if not automatically triggered
		2.	ISOLATE ammonia exit ammonia feed tank
		3.	PROCEED with Normal Shutdown procedure

2.3 Emergency Operation Loss of Air - Urea

F	B		Task To Be Performed
			*In the event of a sudden loss of Air, the Urea plant will require a Unit Shutdown*
		1.	ACTIVATE "G" trips, shutting down all process feeds
		2.	PROCEED with Normal Shutdown procedure

2.4 Emergency Operation Loss of Air – Nitric Acid

F	B		Task To Be Performed
			*In the event of a sudden loss of Air, the Nitric Acid plant will require a Unit Shutdown*
		1.	ACTIVATE "C" trip
		2.	ISOLATE ammonia exit ammonia feed tank
		3.	PROCEED with Normal Shutdown procedure

2.5 Emergency Operation Loss of Power - Urea

F	B		Task To Be Performed
			*In the event of a loss of Power, the Urea plant will shut down due to loss of feed*
		4.	PROCEED with Normal Shutdown procedure isolating process

2.6 Emergency Operation Loss of Power – Nitric Acid

F	B		Task To Be Performed
			*In the event of a Power, the Nitric Acid plant will require a Unit Shutdown*
		1.	ACTIVATE "A" trip, if not already active
		2.	ISOLATE ammonia exit ammonia feed tank
		3.	PROCEED with Normal Shutdown procedure
		4.	SLOW ROLL air machine as soon as power is restored

2.7 Emergency Operation Loss of Containment - Urea

F	B		Task To Be Performed
			*In the event of loss of containment, that is not determined to be isolatable, unit shutdown should be initiated*
		1.	ACTIVATE "G" trips, shutting down all process feed streams.
		2.	PROCEED with Normal Shutdown procedure isolating process

2.8 Emergency Operation Loss of Containment – Nitric Acid

F	B		Task To Be Performed
			*In the event of a loss of containment, the Nitric Acid plant will require a Unit Shutdown*
		1.	ACTIVATE "C" trip
		2.	ISOLATE ammonia exit ammonia feed tank
		3.	PROCEED with Normal Shutdown procedure

3.0 Document Revision Record

Rev No	MOC No	Change Description	Date	Initial
00		Emergency procedures were broken out in order to ease employee access.	8/1/2016	REB